



# **STATE OF WASHINGTON DEPARTMENT OF FISH AND WILDLIFE**



## **DROUGHT CONTINGENCY PLAN** July 2001

***Drought Coordination Team:***

Steve Keller - WDFW Drought Coordinator  
Jackson Wilson - Drought Impacts Analyst  
Lloyd Phinney - Regional Drought Coordinator  
Perry Harvester - Regional Drought Coordinator  
Dick Allen - Regional Drought Coordinator

***Drought Committee:***

Steve Keller - Chair - Region 6 Director  
Larry Peck - Deputy Director  
Lloyd Phinney – Director’s Office  
Perry Harvester – Director’s Office  
Dick Allen – Director’s Office  
Jackson Wilson - Business Services  
Harvey Childs - Engineering  
Mark Quinn - Wildlife  
Chuck Johnson - Fish  
Hal Beecher - Habitat  
Don Gatlin - Enforcement  
John Andrews - Region 1 Director  
Dennis Beich - Region 2 Director  
Jeff Tayer - Region 3 Director  
Bob Everitt - Region 4 Director  
Lee Van Tussenbrook - Region 5 Director  
Carl Samuelson - Intergovernmental Policy  
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## INTRODUCTION

On March 14, 2001, Governor Locke declared a statewide drought emergency, warning state agencies and Washington citizens to prepare for the worst drought since 1977. Snow pack in the mountains was 50 to 60 percent of the average for that time of year and 30 Washington rivers were experiencing record low flows. Flows in the Columbia River were just 42 percent of average at the Dalles; the Cowlitz was running at 37 percent of average, the Skagit at 44 percent, and the Wenatchee at 35 percent. Despite some increased rainfall in late spring and early summer, these conditions have shown no sign of improving and present a continuing threat to state agriculture, forest lands, fish and wildlife. The Thirty Mile forest fire, which killed four firefighters in Okanogan County, and the stranding of hundreds of thousand of salmon smolts on the mid-Columbia River are just two examples of the kind of devastation that can be directly attributed to drought conditions in Washington state.

This Drought Contingency Plan was prepared by the Washington Department of Fish and Wildlife (WDFW) to guide the agency's response to the drought of 2001. WDFW is already engaged in managing the impacts of the drought on several fronts and will use the plan in its continuing efforts to protect fish and wildlife in the context of the state's overall drought response.

### **Preparing WDFW's Response**

Prior to the Governor's Drought declaration, WDFW organized an internal Drought Committee with representatives from throughout the agency to develop a comprehensive response to the drought. The committee was specifically charged with identifying:

- The agency's drought risks and liabilities.
- Actions that can be taken to address those risks and liabilities.
- Funding shortfalls that could result from responding to the drought.
- Ways to coordinate across programs to ensure an efficient response to the drought.

Steve Keller, Region 6 Director, was appointed WDFW Drought Coordinator to lead the agency's response. Keller is responsible for implementing the agency's drought plan with the assistance of the WDFW Drought Team, which includes Jackson Wilson, the agency's economist, and three field biologists brought on in mid-April – Perry Harvester, Dick Allen, and Lloyd Phinney. The team has worked closely with WDFW's Intergovernmental Policy staff and the Director's Office, particularly on those activities that relate to Columbia River power generation and the needs of treaty Indian tribes.

As coordinator of the WDFW Drought Team, Keller also represents the agency on the Executive Water Emergency Committee, an interagency planning group chaired by the Governor's Office. The committee, designed to promote interagency coordination on water issues, also includes representatives from the state departments of Ecology, Health, the Office of Community Development, the Emergency Management Division, the Federal Emergency Management Agency, and the Conservation Commission. The Governor's Office has also convened an ad hoc

Core Group of directors and policy staff from Ecology, Agriculture, the Conservation Commission, and WDFW. This group meets as needed to provide guidance to agencies and to develop work products as needed to address fast-breaking drought situations.

In addition, the WDFW Drought Team has been working with the Emergency Drought Operations Center (EDOC), a multi-agency group charged with the day-to-day operational issues of drought mitigation. Led by the Washington Department of Ecology (Ecology), the EDOC has been meeting weekly since mid-March and includes representatives from the Department of Agriculture, the Department of Health, the Washington Conservation Commission, and WDFW. WDFW also provides staff to the state Emergency Command Center and other ad hoc, drought-related groups (e.g. Central Puget Sound Water Forum) whose objective is to reduce the impacts of drought on fish, wildlife, WDFW, and its constituents.

### **Drought Funding Issues**

Following the Governor's drought declaration, state agencies were instructed by the Office of Financial Management (OFM) to prepare budget decision packages that identify drought contingency funding needs. To date, no direct funding from the Legislature to WDFW has resulted from those requests.

However, the Governor's drought declaration did make \$5.1 million available to Ecology in emergency drought funds, while also authorizing the review and processing of emergency water rights and changes in water diversions. Ecology allocated those emergency funds to three key areas of concern by earmarking \$2 million for agricultural assistance, \$1.1 million for municipal water needs, and \$2 million for projects designed to aid fish stocks affected by the drought. Ecology also provided additional funding to WDFW and other state agencies to assist in coordinating drought planning within their agencies and among their constituencies.

Since those funding priorities were established, WDFW has assisted Ecology – through the EDOC – in allocating \$1.5 million to purchase short-term water leases from willing sellers to improve stream flow in critical areas. The remaining \$500,000 in emergency funds available for fish assistance has been directed to individual drought projects such as aeration systems at fish hatcheries, adult salmon “trap-and-haul” projects and a number of minor, temporary fish-passage projects. WDFW has also assisted the Governor's Office in procuring \$1.5 million from the Bonneville Power Administration (BPA) for water leases in the Columbia Basin, and is currently identifying additional funding needs in the 2001-2003 biennium. These activities and projects are being coordinated with treaty tribes, which are also eligible for state emergency funding for drought projects. WDFW has been involved with treaty tribes on several fronts to ensure their fish needs are met to the extent possible during the drought.

## **DROUGHT RISKS AND LIABILITIES**

Judging from past experience and current field reports, most drought issues of concern to WDFW relate to low stream flows and their impact on fish in eastern Washington streams. In mid-June, WDFW biologists were already working to rescue more than 700,000 salmon smolts stranded in the gravel in the mid-Columbia River – seven times the number in the previous two years. This year, however, several rivers on the Olympic Peninsula, Puget Sound and the Lower Columbia River will also be affected by low stream flows to varying degrees. The drought could also have significant impacts to wildlife, particularly in upland areas such as the Yakima Basin and the other major Columbia River tributaries, and it has already been cited as a major factor in several forest fires. In addition, the drought could have several secondary effects on WDFW, including revenue losses due to closed or curtailed fishing and hunting seasons and workload issues resulting from an increased number of dangerous wildlife incidents.

In developing the agency drought plan, the WDFW Drought Committee worked with agency programs and all six regional offices to compile a matrix of potential drought impacts facing fish and wildlife and actions that could be taken to mitigate those impacts. The Drought Committee then refined the matrix, and developed a prioritized list of specific projects designed to achieve those mitigation goals. Below is a summary of anticipated impacts to fish and wildlife, agency programs, and agency constituents:

### **Fish**

Direct impacts to fish in streams, estuaries, reservoirs and lakes:

- Blockages to upstream adult salmon migration and spawning.
- Low flows and critical high temperatures during summer months.
- Possible die offs of adult returning salmon due to low water, high temperatures, crowding and low dissolved oxygen.
- Rearing and spawning habitat will be compressed or unavailable with low or non-existent flow, especially in eastern Washington.
- Stranding of juvenile salmonids due to low flows in streams and irrigation ditches.
- Fish mortalities in severely drawn down reservoirs and other flow manipulations.

Impacts to hatchery and fish rearing operations:

- Hatchery fish will need more frequent medications due to virulence of disease organisms at higher water temperatures.
- Fish may need to be released earlier or relocated to safe havens – which results in higher trucking costs and increased handling stress and mortalities.
- Hatchery intakes and wells may need to be modified to provide adequate water supply.
- Hatchery inlets may need to be modified to provide fish passage into facilities.
- Temporary weirs will need to be installed and increased snagging and gaffing may be necessary to collect adult fish.

## **Wildlife**

- Terrestrial water shortages for birds, small game, and big game.
- Impacts to waterfowl amphibians and other species as wetlands recede.
- Loss of forage grasses and shrubs.
- Increased disturbance, road kill, and predation as animals are forced to seek water and food near more populated areas.
- Increased incidents of problem and dangerous wildlife as animals are forced to seek water and food near more populated areas.

## **Lands**

- Wild fires and associated habitat destruction.
- Hay production, fencing and other capital improvements could be impacted resulting in higher costs.
- Potential temporary transfer of water rights where WDFW has senior water rights in affected areas.
- Curtailment or reduced use of irrigation diversions used for wildlife benefits.
- Boating access areas may be closed due to low water, potentially reducing license sales.
- Fish passage at WDFW stream crossings may be impaired.

## **Habitat**

- Hydraulic Project Approval permit load may increase due to low flows.
- Review of Ecology water rights, transfers and leases will increase.
- Restoration projects may be delayed due to fire closures.
- Increased staff time spent investigating work done without permits due to permit processing, frustration or low-water opportunity.
- Increased involvement with water purveyors and hydroelectric systems.

## **Enforcement**

- Increased enforcement effort to combat animal damage and to deal with dangerous wildlife as animals are driven away from natural habitats by fire or in search of water.
- Increased enforcement presence on WDFW lands to combat fire threat.
- Increased enforcement presence on spawning streams, and in fisheries due to vulnerability of salmon stocks Wild fires and associated habitat destruction.
- Increased enforcement presence to address Hydraulic Project Approval issues.
- Increased enforcement presence to address illegal water diversions.

## **Business Services**

- Potential significant decrease in hunting and fishing license sales due to fire closures and other fishing or hunting restrictions. This may especially be the case in subsequent years if extremely poor fish survival in fresh water this summer is reflected by low numbers of returning adults.
- Energy costs are expected to rise dramatically, putting a severe strain on the agency's budget, especially at our hatcheries and fish rearing facilities that depend wholly or in part on well water.

## **DROUGHT IMPACT MITIGATION ACTIONS**

WDFW staff have been heavily involved with addressing the agency's drought risks and liabilities since mid-March. This plan documents actions already taken as well as actions yet to occur. What actions WDFW actually takes will depend on how the drought affects stream flows and upland habitats, as well as the availability of funding and the agency's success in forging new public and private partnerships. The following narrative and tables identify drought actions needed and WDFW's likely response:

### **General**

#### ***Action Needed:***

Organize internally to identify drought risks, liabilities and actions.

#### ***Response:***

WDFW established an internal Drought Committee, Drought Coordinator, and Drought Team (see page 1). The Drought Committee and the Drought Team identified drought risks, liabilities and potential actions to be taken and met with regional staff to further develop this plan. This information was entered onto a Drought Control Sheet for project planning and tracking and as a source of information for those interested. The control sheet is organized by the Water Resource Inventory Area (i.e. watersheds) and by WDFW. Appendix A is an example of information used to plan and track an individual action; in this case the construction of a fish passage project to assist upstream migrating adult salmon.

The Drought Team has been very active in the EDOC, the Drought Core Team, Executive Water Emergency Committee, and the Central Puget Sound Water Suppliers Forum, which includes representatives of the major utilities in three Puget Sound counties. WDFW has also formed an internal ad hoc project sub-group to coordinate WDFW project permitting and construction. We have enforcement staff assigned to the state Emergency Management Center.

#### ***Action Needed:***

Prepare program budget decision packages for the Office of Financial Management for consideration for funding by the state Legislature.

#### ***Response:***

WDFW programs submitted eight decision packages in March to OFM totaling \$3.431 million and 1.9 FTE's. Agencies were instructed to prepare the packages as if the drought were over November 1, 2001. The decision packages identified funding needs for the Drought Coordination Team, increased enforcement efforts, technical expertise for water rights processing, water quantity/quality improvements at several WDFW hatcheries, increased fish medication costs, increased hatcheries power costs, costs associated with fish collection and transfers, and costs of monitoring fisheries and salmon/steelhead spawning grounds. To date, no specific WDFW decision packages have been funded by the

Legislature. However, some of the needs identified in the decision packages were funded by Ecology from existing emergency drought funds. See below.

***Action Needed:***

Participate on the Executive Water Emergency Committee and provide information and coordination with other state agencies regarding drought issues.

***Response:***

WDFW has participated on the Executive Water Emergency Committee since mid-March 2001. The agency provides periodic drought updates on fish and wildlife issues and has contributed to the committee's 2001 Drought Action Plan. Committee members including WDFW have provided periodic briefings to the Legislature on drought issues.

***Action Needed:***

Work with the Emergency Drought Operations Committee Chair and member agencies to identify and procure funding for drought-related administrative and planning activities.

***Response:***

WDFW requested \$71,000 and 5 FTE's for drought administration and planning for April 1 to November 1, 2001. The agency received \$63,000 and 3.0 FTE's for April 1 to November 1, 2001 from the Ecology Drought Fund. This money funds the regional drought coordinator positions.

**Fish**

***Action Needed:***

Work with the Governor's ad hoc core group, which includes representatives from the Intergovernmental Policy staff, the Governor's Office, Ecology, Agriculture, and the Conservation Commission to develop a list of water leasing projects to improve stream flows in the Columbia River basin for funding consideration by the BPA.

***Response:***

The core group set priorities for water leases based on the 16 over-appropriated basins identified in the Governor's 1999 "Extinction is not an Option" statewide salmon recovery plan as well as the status of salmonid stocks in these basins; the Conservation Commission, "limiting factors" analyses; and the ability of the state to lease water otherwise diverted for upland purposes for fish use instream. The Governor's Office then met with and obtained approval from BPA for water purchases not to exceed \$1.5 million for the 2001 drought year. The EDOC is now coordinating this program and staff from Ecology, WDFW, and the Conservation Commission, are actively seeking willing sellers who are interested in participating in this program. Although the process has been slow, the contracts are being completed. See below.



***Action Needed:***

Work with Intergovernmental Policy staff, the Governor's Office, Ecology, Agriculture and the Conservation Commission to develop an emergency rule amendment to the Columbia River Instream Flow Rule. This action was recommended by Ecology and the Governor's Office to allow to the extent possible, water diversions for agricultural purposes to users whose rights were junior to the established instream flow. The Instream Flow rule allowed Ecology to reduce the minimum flow by 24% based on a flow formula in the rule.

***Response:***

WDFW was opposed to going below the 24% reduction allowed by rule. In response, Ecology was able to make sufficient water available to the irrigators without going below the 24% reduction by purchasing additional water from BPA.

***Action Needed:***

Work with the Emergency Drought Operations Center Chair and other members to identify water-lease options on stream reaches with inadequate instream flows and to identify minor fish passage and hatchery operation needs to mitigate drought impacts.

***Response:***

Ecology allocated \$2 million from the Emergency Drought Fund for drought impact mitigation for fish. The Drought Team, working with the Fish and Habitat Programs and using information gathered from the Drought Control Sheet and the BPA submittal referenced above, provided a project list to Ecology that included \$1.5 million for water lease purchases, again mostly on the east side, but also including the Dungeness River. WDFW also provided Ecology with a project list that includes \$300,000 for work at several west side hatcheries including adult trap and haul weirs. WDFW also identified \$145,000 for minor channel modifications at over 40 stream reaches where the potential for fish passage barriers exist due to low flows.

The Ecology water lease list was derived in part from the BPA list discussed above, and expanded based upon input from WDFW regional staff. The hatcheries list was derived from the OFM decision packages also discussed above. Regional staff and the Drought Team generated the minor projects list. The Drought Team prioritized the projects using a quantitative formula to rank similar projects based on known attributes of the area and expected characteristics of the project. The Drought Team considered stock status (ESA and SaSSI), the probability that the event would occur (drought condition at critical time, etc.) and the feasibility of doing the project (crew, equipment, landowner access, permits, etc.). The ranking also considered if, regardless of ESA listing or SaSSI status, whether there would be a significant impact on a sport or commercially utilized species. However, if there were listed species and there is the same probability, feasibility and resource impact, then the project affecting listed species would have a higher ranking.

WDFW is actively working with Ecology, the Conservation Commission, and willing landowners on water leases. This process has been slower than expected, although, several leases in the Yakima and Tucannon River watersheds are near final approval as is a contract for Dungeness River water. WDFW is also working with the permitting agencies, our construction crews, and individual landowners (for access) to permit, stage and construct the hatcheries improvements, adult trap and haul projects and the minor fish passage projects. Most are on the east side and most involve minor excavation or flow aggregation to improve fish passage for adult chinook.

The WDFW Fish program will be monitoring several Hood Canal and Strait of Juan de Fuca summer chum salmon streams where minor hand modifications to beaver dams may be necessary to facilitate adult fish passage. A crew from the Habitat program will perform the work.

Whether or not these projects are done and to what extent will depend on flow conditions at the time adult fish return. Tables 1 and 2 list the projects identified to date. Table 1 is sorted by priority and Table 2 is sorted by WRIA. This list will likely change as the drought progresses, with some projects dropped or modified and additional projects added.

***Action Needed:***

Work in partnership with the Central Puget Sound Water Supplier's Forum (Forum) to identify and implement fish drought mitigation projects in Pierce, King, and Snohomish Counties.

***Response:***

WDFW has met several times with an Ad Hoc committee of the Forum which includes representatives of the major utilities in the three central Puget Sound counties above – Ecology, Health, the Muckleshoot Tribe, and the Tulalip Tribe. WDFW is requesting pursuing, in order of preference: operational flows from the major utilities that will facilitate migration and rearing conditions, assistance at two WDFW hatcheries and one tribal fish facility, assistance with minor fish passage projects on tributary streams (25 reaches), implementation of water conservation and curtailment strategies, and flow augmentation from smaller water purveyors where it can be shown to be of resource value. At this time, the Forum has made no specific commitments, but we are hopeful some of the projects in these counties will be done in partnership with them. If not, WDFW will conduct as many of the minor fish passage projects as necessary given our current funding. The agency will also complete the Soos Creek and Voights Creek hatcheries projects with or without Forum assistance. Notwithstanding the potential for funding and/or in-kind assistance from the Forum, WDFW and staff from the various major utilities in the Forum have been participating in long-standing water operations committees. We feel our partnership with the Forum will facilitate better communication and cooperation to achieve improved operational flows for fish during the drought.

## **Wildlife**

### ***Action Needed:***

Monitor wildlife populations and habitats for significant drought-related issues.

### ***Response:***

To date, WDFW staff has not observed any significant drought-related issues. In contrast to fish, which are dependent on snow melt and subsequent stream flow, wildlife species are more dependent on rainfall, timing, duration, and amount as it relates maintenance of upland forage and cover. We have been fortunate that this spring and early summer have been fairly normal in terms of rainfall and overcast days. Time will tell how the summer will affect wildlife, especially as a result of wildfire. WDFW will work with state, local, and federal agencies to minimize wildfire damage to our facilities and to fish and wildlife. We will assess wildfire damages as they occur and seek legislative funding, where applicable, to mitigate for those damages (e.g. winter feeding, fence repairs, etc.).

## **Lands**

### ***Action Needed:***

Identify surface water diversions on WDFW lands for upland uses and demonstrate water conservation measures at these diversions.

### ***Response:***

The Wildlife Program has identified over 55 points of diversion on WDFW lands, listed the purpose of the diversions and has identified reductions or complete curtailment of diversions in 34 instances. Most of these diversions are on the east side and most involve irrigation for wildlife forage benefit. Many of the diversions involve sharecrop leases with others that make curtailment complicated. In future leases WDFW will negotiate contact clauses that allow for irrigation curtailment or other actions to be taken by lessees in drought situations.

## **Habitat**

### ***Action Needed:***

Participate in assessment of fish and wildlife impacts and provide mitigation recommendations to minimize impacts.

### ***Response:***

The Habitat Program has participated on the Drought Committee, provided recommendations to the Drought Core Team on critical stream reaches for water purchases, has a program representative on the Drought Team and has assisted the Drought Team and the Fish Program in identifying stream reaches where adult or juvenile passage could be impaired by low stream flow. Habitat Program staff are also involved with day to day operations at most large hydro-power, flood control, and water supply dams and work closely with operators to minimize drought impacts.

***Action Needed:***

Help WDFW staff to comply with the State Environmental Policy Act and to secure a programmatic Hydraulic Project Approval (HPA) for WDFW drought projects.

***Response:***

WDFW Habitat and Fish Program organized an internal project development and permitting meeting where drought project participants were instructed in permit requirements and project scheduling. The Habitat Program led an ad hoc group in further refining the projects list and prepared a SEPA checklist and programmatic HPA for drought projects. Construction superintendents were matched with regional drought coordinators to conduct site reviews and to ultimately construct the projects.

***Action Needed:***

Process additional non-WDFW HPAs as they arise.

***Response:***

Area Habitat Biologists are anticipated to be able to meet the demand for additional HPAs as they arise.

**Enforcement**

***Action Needed:***

- Provide enforcement presence to combat animal damage and to deal with dangerous wildlife.
- Provide enforcement presence on WDFW lands to combat fire threat, and coordinate WDFW assistance for wildfire suppression.
- Provide enforcement presence on spawning streams, and in fisheries due to vulnerability of salmon stocks.
- Provide enforcement presence to address additional Hydraulic Project Approval issues.

***Response:***

The Enforcement Program will to the extent possible take the actions described above, with emphasis placed on dangerous wildlife first, fire threat second, and streams containing ESA-listed or SaSSI critical stocks third. Close coordination with regional staff will be required to identify priorities.

Enforcement staff is assigned to the Division of Emergency Management Emergency Command Center. Staff have identified in general how WDFW facilities, staff and equipment can be used for fire suppression assistance. It should be noted that WDFW personnel are neither trained nor equipped for formal fire suppression efforts. We rely upon other state or local entities for fire suppression. However, most wildlife area and hatchery staff is capable of providing immediate fire suppression efforts for wildfires that may threaten WDFW facilities.

We will provide the Command Center with a list of WDFW resources such as ready water sources (standpipes for filling tanker trucks, either gravity feed or pump supply, or ponds that can be used as a water source), portable water pumps, fish planting trucks that may be used for hauling water (300-2000 gallon capacity), heavy equipment, power and hand tools, boats of various sizes and capabilities, communications equipment capability, and staff and vehicles that may be provided for ancillary fire suppression activities.

### **Business Services**

#### ***Action Needed:***

Take steps necessary to reduce overall agency energy consumption.

#### ***Response:***

WDFW has taken energy conservation steps such as reducing lighting, turning off computers when not in use, turning down thermostats, etc., with the intent of reducing overall energy consumption within the agency by 10%.

#### ***Action Needed:***

Track the fiscal impact of drought on agency revenue and costs. Adjust revenue forecasts accordingly.

#### ***Response:***

Jackson Wilson, Drought Impacts Analyst for the Drought Team, has worked with other agencies to assess the impacts of drought on the state. He will conduct the analysis necessary to adjust revenue forecasts.

## **COMMUNICATIONS PLAN**

#### ***Action Needed:***

Provide education and information about the impacts of drought on fish and wildlife and the agency.

#### ***Response:***

The Public Affairs Division has assigned a media staff person to provide information and education support for the Drought Team. The agency participates in the Drought Joint Information Center, headed by Ecology, which includes several state agencies and the Governor's Office. The center releases weekly updates on drought. Fish and wildlife issues are covered in those releases.

The Drought Contingency Plan will be featured in a press release and posted on the agency's web page. Drought impacts were featured in the June 2001 edition of the agency's "Wild about Washington" video, which is distributed to public television stations statewide. The Fish and Wildlife Commission's June 8, 2001 workshop, which was televised on TVW, the state government television channel, included a drought presentation. In addition, the Drought Coordinator has provided interviews to several newspaper reporters.

The Drought Control Sheet allows WDFW to develop customized reports in various formats - by WRIA, by program, and by resource. These reports can be provided to legislators, other agencies, media outlets, and the public.

The Executive Water Emergency Committee has prepared a state agency 2001 Drought Action Plan, which will be posted on the Governor's Office web page. A summary of our agency's risks, liabilities, and anticipated actions is included in this plan. The plan will be updated as the drought proceeds.

## **DROUGHT CONTINGENCY PLAN REVIEW AND ADAPTIVE MANAGEMENT**

### ***Action Needed:***

After the drought is over, an assessment of the effectiveness of this plan and the impacts on fish and wildlife and agency operations and revenue will be needed. Adaptive management should be employed as necessary to improve the agency's response to future drought emergencies.

### ***Response:***

While it is difficult to predict the actual end of the drought, some experts feel this may be more than a one-year phenomenon. The Drought Committee will remain functional for a short period after the end of this drought emergency to assess the agency's response to drought, the impacts of the drought on fish and wildlife and agency operations and revenue, and to employ adaptive management as necessary to allow WDFW to manage future drought emergencies. This information will be added to the 2001 Plan and it will be filed with the Intergovernmental Policy unit of the Director's office for future reference and use.

# FIGURE 1. SAMPLE DROUGHT CONTROL REPORT SHEET

<b>ID:</b>	29	<b>Date Submitted:</b>	05/22/2001
<b>HEAD:</b>	Dt	<b>Beginning Date:</b>	06/15/2001
<b>Activity #:</b>	3	<b>End Date:</b>	09/30/2001
<b>WRIA:</b>	45	<b>Duration:</b>	2 days
<b>Stream Name:</b>	Wenatchee R.		
<b>Land Area:</b>			
<b>Problem:</b>	Upstream passage		
<b>Problem Description:</b>	Adult migration blockage at Tumwater Dam		
<b>Activity:</b>	channel modifications	<b>Inter-Program?:</b>	y
<b>Lead Person:</b>	Dick Allen	<b>Director's Office:</b>	x
<b>Resource:</b>	Juvenile Spring Chinook, Rainbow, Steelhead and Summer Chinook	<b>Engineering:</b>	
		<b>Fish:</b>	
		<b>Habitat:</b>	x
		<b>Wildlife:</b>	
		<b>Enforcement:</b>	
<b>Effects of non-completion:</b>	High pre-spawning mortality due to disease outbreak, increases vulnerability to poaching.		
<b>Negative Consequences</b>	stranding of juveniles, setting bad examples for other HPA requesters, makes Greens nervous		
<b>Prioritization:</b>	H	<b>Priority:</b>	65.34
<b>ESA:</b>	Y		
<b>SASSI Status:</b>	C		
<b>Public Safety:</b>	0		
<b>Resource Impact:</b>	9		
<b>Utilization:</b>	0.3		
<b>Probability:</b>	0.9		
<b>Feasibility:</b>	0.9		
<b>I/X/N:</b>	X	<b>Est Non-Budgeted Costs:</b>	\$2,000.00

# Table 1. PROJECT LIST SORTED BY PRIORITY

WRIA	Stream Name	Resource	Activity	Cost
<b>Water Leases</b>				
37	Lower Yakima R.	Adult and juvenile Chinook, Steelhead, Coho	lease water rights	\$ 80,000.00
48	Chewuch R.	Adult Spring Chinook, Summer Steelhead and Bulltrout	lease water rights	\$ 120,000.00
48	Twisp R.	Adult Spring Chinook, Summer Steelhead	lease water rights	\$ 170,000.00
32	Touchet River	steelhead, bull trout	lease or acquire water rights for 12 cfs	\$ 360,000.00
32	Mill Creek	steelhead, bull trout	lease or acquire water rights for 5 cfs	\$ 150,000.00
39	Taneum Crk.	Adult Spring Chinook	lease water rights	\$ 24,000.00
48	Early Winters Crk.	Adult Spring Chinook, Summer Steelhead and Bulltrout	lease water rights	\$ 84,000.00
18	Dungeness R.	Adult Chinook, Chum and Pink	lease water rights	\$ 130,000.00
32	Dry Creek	Juvenile steelhead and rainbow trout	lease water rights	\$ 36,000.00
32	Dry Creek	steelhead, bull trout	lease or acquire water rights for 2 cfs	\$ 60,000.00
35	Tucannon	Spring chinook, bull trout, steelhead trout, fall chinook	lease or acquire	\$ 100,000.00
32	Cottonwood Crk.	Juvenile steelhead and rainbow trout	lease water rights	\$ 36,000.00
37	Tearaway R.	Adult and Juvenile Spring Chinook, Steelhead, Coho and Bulltrout	lease water rights	\$ 120,000.00
32	South Fork Touchet R.	Juvenile steelhead and rainbow trout	lease water rights	\$ 30,000.00
				<b>\$ 1,500,000.00</b>
<b>Channel Modifications</b>				
46	Entiat River	steelhead, chinook, bull trout	manipulate channel to provide passage (sand bags?)	\$ 10,000.00
47	25 Mile Crk.	Adult Kokanee	3-4 weirs	\$ 10,000.00
32	Walla Walla R. (state line to Lowden)	Adult steelhead and rainbow trout	channel modifications	\$ 10,000.00
45	Wenatchee R- Tum	Juvenile Spring Chinook, Rainbow, Steelhead and Summer Chinook	channel modifications	\$ 10,000.00
45	Wenatchee R- Dryden	Adult Spring Chinook and Sockeye	channel modifications	\$ 10,000.00
48	Wolf Crk.	Adult Spring Chinook and Bulltrout	channel modifications	\$ 2,000.00
46	Entiat R. (Knapp-Wham and Hamma Divs.)	Adult Spring Chinook	channel modifications	\$ 8,000.00
46	Entiat River	steelhead, chinook, bull trout	manipulate channel to allow passage (sand bags?)	\$ 8,000.00
47	First Crk.	Adult Kokanee	channel modifications	\$ 2,000.00
46	Entiat R. (McKenzie Divs. Over Check Dam)	Adult Spring Chinook	channel modifications	\$ 5,000.00
47	Chelan R.	Adult Salmon	Multiple Berms	\$ 5,000.00
45	Nason Crk.	Adult Spring Chinook and Steelhead	channel modifications	\$ 2,000.00
45	Peshastin Crk.	Adult Spring Chinook	construct 10 berms	\$ 2,000.00
5	Stillaguamish River	chinook, chum, coho, bull trout, steelhead, bald eagles	manipulate channel to allow passage (sand bags?)	\$ 10,000.00
45	Chewaukum Crk.	Adult Spring Chinook and Steelhead	channel modifications	\$ 2,000.00
40	Squidchuck Crk.	Adult Rainbow and Chinook	10 berms	\$ 3,000.00
44	Douglas Crk.	Adult Rainbow Trout	channel modifications	\$ 2,000.00
3	Samish River	chinook	manipulate channel to allow passage (sand bags?)	\$ 10,000.00
40	Sternitt Crk.	Adult Rainbow, Steelhead and Summer Chinook	10 berms	\$ 3,000.00
45	Peshastin Crk.	Juvenile Spring Chinook, Steelhead	Enhancing ponds & Bypass	\$ 5,000.00
45	Mission Crk.	Adult Spring Chinook	construct 10 berms	\$ 2,000.00
46	Mad R.	Adult Spring Chinook	channel modifications	\$ 5,000.00
45	Wenatchee R- Jones	Juvenile Spring Chinook, Rainbow, Steelhead and Summer Chinook	channel modifications	\$ 2,000.00
48	Gold Crk.	Adult Summer Steelhead and Bulltrout	fixing a faulty water diversion	\$ 2,000.00
45	Rock Island Crk.	Adult Coho, Rainbow, Steelhead and Summer Chinook	channel modifications	\$ 1,500.00
46	Roaring Crk.	Adult Spring Chinook and Steelhead	2-3 berms	\$ 2,000.00
45	Wenatchee R- Pioneer	Juvenile Spring Chinook, Rainbow, Steelhead and Summer Chinook	channel modifications	\$ 2,000.00
45	Wenatchee R- S.H.	Juvenile Spring Chinook, Rainbow, Steelhead and Summer Chinook	channel modifications	\$ 2,000.00
45	Brender Crk.	Juvenile Summer Chinook	Enhancing ponds	\$ 2,000.00
				<b>\$ 139,500.00</b>
<b>Hatchery Operations</b>				
9	Soos Crk.	Adult Chinook & Coho	re-use pump, aeration, trap&haul	\$ 30,000.00
10	Voights Crk.	Adult Chinook, Coho & Chum	aeration, trap&haul, truck	\$ 30,000.00
14	Winter Crk.	Adult Chinook & Coho	aeration & oxygen supplementation	\$ 25,000.00
16	Hoodspout	Adult Chinook	pipe pathogen free water from existing wells	\$ 55,000.00
18	Elwha R.	Adult Chinook	trap and haul	\$ 100,000.00
24	Forks Crk.	Adult Chinook	aeration & trap and haul	\$ 25,000.00
24	Naselle R.	Adult Chinook	aeration	\$ 25,000.00
24	Nemah R.	Adult Chinook	reuse pump	\$ 10,000.00
				<b>\$ 300,000.00</b>



## Table 2. PROJECT LIST SORTED BY WRIA (Water Resource Inventory Area)

WRIA	Stream Name	Resource	Activity	Cost
<b>Water Leases</b>				
18	Dungeness R.	Adult Chinook, Chum and Pink	lease water rights	\$ 130,000.00
32	Touchet River	steelhead, bull trout	lease or acquire water rights for 12 cfs	\$ 360,000.00
32	Mill Creek	steelhead, bull trout	lease or acquire water rights for 5 cfs	\$ 150,000.00
32	Dry Creek	Juvenile steelhead and rainbow trout	lease water rights	\$ 36,000.00
32	Dry Creek	steelhead, bull trout	lease or acquire water rights for 2 cfs	\$ 60,000.00
32	Cottonwood Crk.	Juvenile steelhead and rainbow trout	lease water rights	\$ 36,000.00
32	South Fork Touchet R.	Juvenile steelhead and rainbow trout	lease water rights	\$ 30,000.00
35	Tucannon	Spring chinook, bull trout, steelhead trout, fall chinook	lease or acquire	\$ 100,000.00
37	Lower Yakima R.	Adult and juvenile Chinook, Steelhead, Coho	lease water rights	\$ 80,000.00
37	Teaaway R.	Adult and Juvenile Spring Chinook, Steelhead, Coho and Bulltrout	lease water rights	\$ 120,000.00
39	Taneum Crk.	Adult Spring Chinook	lease water rights	\$ 24,000.00
48	Chewuch R.	Adult Spring Chinook, Summer Steelhead and Bulltrout	lease water rights	\$ 120,000.00
48	Twisp R.	Adult Spring Chinook, Summer Steelhead	lease water rights	\$ 170,000.00
48	Early Winters Crk.	Adult Spring Chinook, Summer Steelhead and Bulltrout	lease water rights	\$ 84,000.00
				<b>\$ 1,500,000.00</b>
<b>Channel Modifications</b>				
3	Samish River	chinook	manipulate channel to allow passage (sand bags?)	\$ 10,000.00
5	Stillaguamish River	chinook, chum, coho, bull trout, steelhead, bald eagles	manipulate channel to allow passage (sand bags?)	\$ 10,000.00
32	Walla Walla R. (state line to Lowden)	Adult steelhead and rainbow trout	channel modifications	\$ 10,000.00
40	Squilchuck Crk.	Adult Rainbow and Chinook	10 berms	\$ 3,000.00
40	Sternit Crk.	Adult Rainbow, Steelhead and Summer Chinook	10 berms	\$ 3,000.00
44	Douglas Crk.	Adult Rainbow Trout	channel modifications	\$ 2,000.00
45	Peshastin Crk.	Juvenile Spring Chinook, Steelhead	Enhancing ponds & Bypass	\$ 5,000.00
45	Brender Crk.	Juvenile Summer Chinook	Enhancing ponds	\$ 2,000.00
45	Peshastin Crk.	Adult Spring Chinook	construct 10 berms	\$ 2,000.00
45	Mission Crk.	Adult Spring Chinook	construct 10 berms	\$ 2,000.00
45	Wenatchee R- Tum	Juvenile Spring Chinook, Rainbow, Steelhead and Summer Chinook	channel modifications	\$ 10,000.00
45	Wenatchee R- Dryden	Adult Spring Chinook and Sockeye	channel modifications	\$ 10,000.00
45	Nason Crk.	Adult Spring Chinook and Steelhead	channel modifications	\$ 2,000.00
45	Chewaukum Crk.	Adult Spring Chinook and Steelhead	channel modifications	\$ 2,000.00
45	Wenatchee R- Jones	Juvenile Spring Chinook, Rainbow, Steelhead and Summer Chinook	channel modifications	\$ 2,000.00
45	Rock Island Crk.	Adult Coho, Rainbow, Steelhead and Summer Chinook	channel modifications	\$ 1,500.00
45	Wenatchee R- Pioneer	Juvenile Spring Chinook, Rainbow, Steelhead and Summer Chinook	channel modifications	\$ 2,000.00
45	Wenatchee R- S.H.	Juvenile Spring Chinook, Rainbow, Steelhead and Summer Chinook	channel modifications	\$ 2,000.00
46	Entiat R. (Knapp-WHam and Hamma Divs.)	Adult Spring Chinook	channel modifications	\$ 8,000.00
46	Entiat R. (McKenzie Divs. Over Check Dam)	Adult Spring Chinook	channel modifications	\$ 5,000.00
46	Mad R.	Adult Spring Chinook	channel modifications	\$ 5,000.00
46	Roaring Crk.	Adult Spring Chinook and Steelhead	2-3 berms	\$ 2,000.00
46	Entiat River	steelhead, chinook, bull trout	manipulate channel to provide passage (sand bags?)	\$ 10,000.00
46	Entiat River	steelhead, chinook, bull trout	manipulate channel to allow passage (sand bags?)	\$ 8,000.00
47	First Crk.	Adult Kokanee	channel modifications	\$ 2,000.00
47	25 Mile Crk.	Adult Kokanee	3-4 weirs	\$ 10,000.00
47	Chelan R.	Adult Salmon	Multiple Berms	\$ 5,000.00
48	Wolf Crk.	Adult Spring Chinook and Bulltrout	channel modifications	\$ 2,000.00
48	Gold Crk.	Adult Summer Steelhead and Bulltrout	fixing a faulty water diversion	\$ 2,000.00
				<b>\$ 139,500.00</b>
<b>Hatchery Operations</b>				
9	Soos Crk.	Adult Chinook & Coho	re-use pump, aeration, trap& haul	\$ 30,000.00
10	Voights Crk.	Adult Chinook, Coho & Chum	aeration, trap& haul, truck	\$ 30,000.00
14	Minter Crk.	Adult Chinook & Coho	aeration & oxygen supplementation	\$ 25,000.00
16	Hoodspoint	Adult Chinook	pipe pathogen free water from existing wells	\$ 55,000.00
18	Elwha R.	Adult Chinook	trap and haul	\$ 100,000.00
24	Forks Crk.	Adult Chinook	aeration & trap and haul	\$ 25,000.00
24	Naselle R.	Adult Chinook	aeration	\$ 25,000.00
24	Nemah R.	Adult Chinook	reuse pump	\$ 10,000.00
				<b>\$ 300,000.00</b>